

What is claimed is:

1. An optical distribution network system comprising:

an OLT (optical line termination);

a plurality of ONUs (optical network units);

5 a first optical network and a second optical network, one of which connects said OLT with said plurality of ONUs; and

bandwidth control means for apportioning said plurality of ONUs between said first optical network and said second optical network, for assigning a predetermined transmission bandwidth  
10 to each of said plurality of ONUs, and for accepting a bandwidth change of the transmission bandwidth.

2. The optical distribution network system according to claim 1, wherein when a failure occurs in one of said first optical  
15 network and said second optical network, said bandwidth control means assigns all transmission bandwidths of said ONUs to the other optical network.

3. The optical distribution network system according to claim 1, wherein when a failure occurs in a working side ONU of said  
20 plurality of ONUs, said bandwidth control means switches the working side ONU to a standby side, and switches a standby side ONU to the working side.

4. The optical distribution network system according to claim 3, wherein when apportionment balance is lost of said plurality  
25 of ONUs between said first optical network and said second optical network, said bandwidth control means carries out apportionment of said plurality of ONUs between said first  
30 optical network and said second optical network, again.

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5. The optical distribution network system according to claim 1, wherein said bandwidth control means assigns a minimum cell rate to each of said plurality of ONUs.

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6. The optical distribution network system according to claim 5, wherein said bandwidth control means apportions each of said plurality of ONUs to one of said first optical network and said second optical network such that a sum total of minimum cell rates of said ONUs in said first optical network becomes nearly equal to a sum total of minimum cell rates of said ONUs in said second optical network.

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7. The optical distribution network system according to claim 5, wherein said bandwidth control means apportions each of said plurality of ONUs to one of said first optical network and said second optical network such that a sum total of peak cell rates of said ONUs in said first optical network becomes nearly equal to a sum total of peak cell rates of said ONUs in said second optical network.

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8. The optical distribution network system according to claim 5, wherein said bandwidth control means apportions each of said plurality of ONUs to one of said first optical network and said second optical network such that a sum total of differences between peak cell rates and minimum cell rates of said ONUs in said first optical network becomes nearly equal to a sum total of differences between peak cell rates and minimum cell rates of said ONUs in said second optical network.

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9. The optical distribution network system according to claim 5, wherein said bandwidth control means apportions each of said plurality of ONUs to one of said first optical network and said second optical network such that a sum total of established bandwidths of said ONUs in said first optical network becomes nearly equal to a sum total of established bandwidths of said ONUs in said second optical network.

10. An optical distribution network system comprising:

an OLT;

a plurality of ONUs;

a first optical network and a second optical network, one of which connects said OLT with said plurality of ONUs; and

bandwidth control means for apportioning a plurality of paths contained in said plurality of ONUs between said first optical network and said second optical network, for assigning a predetermined transmission bandwidth to each of said path, and for accepting a bandwidth change of the transmission bandwidth.

11. The optical distribution network system according to claim 10, wherein when a failure occurs in one of said first optical network and said second optical network, said bandwidth control means assigns all the paths contained in said plurality of ONUs to the other optical network.

12. The optical distribution network system according to claim 10, wherein when a failure occurs in a working side path of said plurality of paths, said bandwidth control means switches the working side path to a standby side, and switches a standby side path to the working side.

13. The optical distribution network system according to claim 12, wherein when apportionment balance is lost of said plurality of paths between said first optical network and said second optical network, said bandwidth control means carries out apportionment of said plurality of paths between said first optical network and said second optical network, again.

14. The optical distribution network system according to claim 10, wherein said bandwidth control means assigns a minimum cell rate to each of said plurality of paths.

15. The optical distribution network system according to claim 14, wherein said bandwidth control means apportions each of said plurality of paths to one of said first optical network and said second optical network such that a sum total of minimum cell rates of said paths in said first optical network becomes nearly equal to a sum total of minimum cell rates of said paths in said second optical network.

16. The optical distribution network system according to claim 14, wherein said bandwidth control means apportions each of said plurality of ONUs to one of said first optical network and said second optical network such that a sum total of peak cell rates of said paths in said first optical network becomes nearly equal to a sum total of peak cell rates of said paths in said second optical network.

17. The optical distribution network system according to claim 14, wherein said bandwidth control means apportions each of said

plurality of paths to one of said first optical network and said  
second optical network such that a sum total of differences  
between peak cell rates and minimum cell rates of said paths in  
said first optical network becomes nearly equal to a sum total  
5 of differences between peak cell rates and minimum cell rates  
of said paths in said second optical network.

18. The optical distribution network system according to claim  
14, wherein said bandwidth control means apportions each of said  
10 plurality of ONUs to one of said first optical network and said  
second optical network such that a sum total of established  
bandwidths of said paths in said first optical network becomes  
nearly equal to a sum total of established bandwidths of said  
paths in said second optical network.

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